[illegible]

? 1848 /

The cactus found on the rocks at the mouth of Missizoo at on the granite at Little Rock is the Cactus Ferox

Table R. mouth St. Croix 126 ft

highest Land left s. "

5 from mouth — 383 "

Left side 16 m. from m 253

hill behind Village at Mouth ~~Still water~~ Willow R 43

Bluff Just below Still water 179 - 79 - 100 sand Limestone

biggest at navy house

Trap falls 2d Range 173 ft

---

in Red paper Box trunk

Planorbis [illegible] still water

" Bicarinata

"

" still water

Paludina White Bear Lake near

Cyclas - Pond near Still water

Cornelian Lake

Paludina Integra

Anadonta Plana

Planorbis Trivolvis

Valvata Tricarinata

Varnish for Shells

Canada Balsam &
Spts Turpentine - equal parts
Boil in water Bath.

Varnish for maps. 2. or 3. coats Ising=glass. sol. in warm water - then varnish with the above shell varnish —

List Shells St. Croix Lake & River —

116	Unio — Rubiginosus —	Lea
121.	— " Metinecorns —	Rafinesque
131	" Elipsis	Lea
137	" Quadralus	Rafinesque
102	" Bullatus —	"
150	" Elegans —	"
120	" Securis	Lea
139	— " ~~Rufisus~~ Commutus —	Barnes
153	" Tuberculatus	Barnes
123	" Mytiloides	

Short memo

Left home Ap 6. 1848. at New Harmony

Ap 7th ~~Stayed there till~~

All started from Harmony 2d May.

At St. Louis 4th May

Started from St. Louis 11th May

Still Water May 17th

Our camp start to St Peters 25th May

at St Peters Sunday May 28.

Start up St Peters Thursday June 1st

Traverse des Sioux Tuesday June 6th

Saturday June 10th go up Blue Earth

Started down Blue E. June 26th

July 1st Temp at sunrise 35. frost.

at mouth B. E. & go up St. Peters June 29

Mr. Naizoo Sat July 1st

Monday July 3d Little Rock

arrived at Ft. Snelling Sat. July 15.

Start for Still water July 26th

arrived Still water Saturday July 29.

Sunday July 30th 12. O'clk m. wind North west. 1. Temp 66 - 15. Lodges of Sioux of Little Crow village, are just pitching their tents on the opposite side the Lake, we passed them yesterday about 8. miles below this place, encamped on the right shore. they are going up the St. Croix on a hunting excursion.

Walked out to a beautiful little lake about one mile below town on the high prairie, in company with Mr. Bartlett & Mr. Haines Lake about half mile across, nearly round water as clear as crystal, shore pebbly and sand beach - growing in the Lake, in places near shore yellow pond Lily (Nuphar

) white pond Lily (Nymphaea

saw along the shore Planorbis companulata P. Bicarinata P.- & P.- also Cyclas

physas, paludinas, and Anadontas
light Showers during the afternoon.
Sunset Cloudy. Wind N. N. W. 2. Temp
=erature 60°

Monday July 31st 6. ocl'k A.M. Clear
Wind west North west 2. Temp 56°. Mr Haines
& Mr Bartlett & myself walked out 6 miles to
Carnellian Lake, this is the prettyest
lake I ever saw. it is about 3. miles long
and at the widest place 1½ to 2 wide
and in one place, near the middle
divided, nearly, by a long narrow promontory
or Peninsula. has a small nearly round
Island covered with trees. beautiful groves
along the Shores and Jutting points.
the Shores are everywhere covered with
small boulders and gravel of every
Col. primary rocks. Saw amongst them
some pretty agats &
many beautiful porphyries. the water of the
Lake as clear as crystal, so that the bottom
can be seen where it is 10 or 12 feet deep
It deepens gradually from the shore.
and must be very deep out in the middl
It abounds in fish, chiefly Bass, Trout,
& Pickerel. The Shore everywhere strewed with
shells amongst which we collected the. Planorbis
Trivolvis, P. campanulata. P. Bicarinata &
several other species of Planorbis. Paludina
Integra. Limnea Jugularis, in great numbers,
valvata bicarinata. Several species physas
& Cyclades. also Unio Siliquoidus. and
Anadonta Plana. Saw swiming in the Lake
several Loons, (great northern diver) and some
wild geese. the lake lays the longest way
North west & south East. the promontory,
that comes so near dividing it point

I saw evevidences that the water in the lake is subject to elevations & subsidences at long intervals - dead trees along the margin roots below the present low water level

east from the North Shore. along the South Shore, which is very uneven, being full of bays & promontories, there are many Lagoons or small deep ponds cut off from the lake by low sand banks the water in these is as clear & pretty as that in the Lake - they generally contain the same shells found in the Lake. The Trees about the Lake are generally small scrubby Burrcup oaks, with a few red birch along the shore. collected from some fragments of Magnesian Limestone (not in place but evidently near the parent rock) some fine specimens of Pleurotomaria & Euomphalus * see top.

At 12. cloudy and slight shower wind N. 1. Temp 70.

returned to Camp at Sunset, pretty tired having walked some 15 or 16 miles during the day.

Sunset cloudy wind 0. Temp 56°

Tuesday August 1st. Having continued my observations upon wind & the Temperature during our Trip up the Blue Earth & St. Peters rivers and back to this place, I will probably discontinue the same during the bal. of the season. Mr Randalls party are all here now and will remain till Mr Macy returns from Galena. Mr Randall who had went some to visit the falls St. Anthony returned yesterday evening by Land. Mr Battel & Dr Parry who are here now accompany him from here up the St. Croix and across the country to Lake Superior.

Mr Randall was very unfortunate in

being robbed of everything as he came across from the head waters of ~~St. Croix~~ ~~to~~ Desmion to the head of Blue Earth ~~Mississippi~~ river. by the Sioux. they took from him his horses blankets and everything giving him in return an old Indian pony and one pair of half worn Indian blankets they also broke his Instruments.

Wednesday Aug 2d collected to day several specimens of Trilobites & Lingulas from the Trilobite bed above the village. also collected a number of minute shells mostly helices, pupas &c.

~~Thursday~~ Wednesday Aug 3d Spent the day in packing & arranging specimens, and in writing to friends.

Thursday Aug. 4th attempted to measure the height of several elevations about Stillwater this morning, with the Barometer, but owing to variable state of the atmosphere could not rely upon my observations. am tired laying inactive here; but we cannot start till Mr Macy arrives, with funds from Galena. and we are not certain until we hear from him whether or not the appropriation bill for the continuation of the Survey has been passed by Congress.

Saturday Aug 5th the S.B. Dr Franklin arrived here last night but Mr Macy did not come. We received a letter from him however, stating that he had not yet received any intelligence from Washington. no drafts had yet arrived at Galena, and he did not know whether or not the appropriation bill had passed. as it will be upwards of a week before we can hear again from him we have concluded to go up to the falls of the

St. Croix, and spend the intervening time in Examining the Trap rock ranges at that place. ascertained the temperature of the spring near camp to be 48° two of those near fort Snelling were 47½ and one 48° which is not far from the average Temperature of the Climate

Sunday Aug 6th beautiful clear morng South E. wind. rose early to make preparatns to start up to the falls. got off at 8 oclk. Just above the town the valley bears east of North 30° the hills close in on each side so that the valley is not more than from ½ to 1. mile wide with precipitous hills cliffs of Mag[n] Limestone underlaid by sand stone, as we go higher up the sand stone mounts higher in the hills so that some 6 miles up the entire cliffs are

sandstone, the Limestone having run out. here the hills are more rounded with few escarpments - the Cliffs below this are very picturesque, having occasional clumps of pines scattered amongst the Elms Linden ash birch &c there are many narrow Islands on both sides, cut off from the hills by sloughs. Stopped on the right side to dine about 7. mils above still water at the base of bluff of sand rock. here we saw some fine Springs pouring from the sand stone. saw below this the first cardinal flower yet seen much of a very large species of arrow head along the Islands, has a large leaf and flower, which latter is white also along the wet base of bluff the sensitive

fern. wild parsnip. Equisetum hyemale with many ferns and Liberworts. also saw the Ewe tree low & spreading with bright red sweet berries leaves like fir trees; also small ~~hem lock~~ spruces

a short distance above this along near the mouth of Apple R. the valley spreads out to some three or four miles in width. the bottom is low & flat being cut up by Sloughs into numerous long Islands it seems probable that the whole valley here was once a lake which has since filled up. these Islands a clothed with soft walnut leaf maple ash Elm willow &c and are thickly set with tall sedge grass. which is mowed by the settlers along here and makes good hay. see some places on the Islands great quantities of large Trilobate leaved Ambrosia. the hills seen in

the distance are very sparsely clothed with trees, amongst which I see at some places a few pines. saw bear tracks in the sand along the shores a few miles below,

about 2. miles below the marine mills we saw sandstone in thin strata on the Right side the river near the edge of the water on examining it we found it to contain many pieces of Trilobites Lingulas and fucoidal markings. although the rock contain many of these fossils we could find no good specimens.

At about 3. oclk we arrived at the Marine mills 10 miles from Still water Mr Pratton Dr Parry & myself came up in the canoe with the two voyagers Mr Randall. Mr Haines. & Mr Bartlett walked up and arrived at the mills

about 3. ocl'k. here at the mills we find, owing to the dipping of the strata that the fossiliferous bed mention-ioned as seen 2 miles below is sight on the top of the bluff about 35 feet above the river. (Seen above the mills 2 m. at edge water also) We begin to see here manifest signs of our proximity to the Trap rocks — a lower stratum of the sandstone near the edge of the water here is reddened and much hardened by heat so that it seems to be intermediate between sandstone and quartzite. I see in this as well as in the thinly stratified nature of these lower beds of the sandstone underlying the Lower Magnesian Limestone in this region, additional evidence that the quartzite at the mouth of the Waraju on the St. Peters is the same rock changed by its proximity to the granite.

Monday Aug. 7th saw in the thinly stratified sandstone this morning below the mill distinct ripple marks — another evidence of the contemporaneity of this and the Waraju quartzite. There is here on top of the reddened lower stratum which is seen about 12 feet above the water, a seam of blue earth exactly similar to that which occurs higher in these rocks on the Blue Earth river just above the mouth of Lesueur River.

All started at ½ past 7. ocl'k. for the Osceola mills Mr. Pratton, Mr. Bartlett, Mr. Randall and Mr. Haines with the voyageurs in the canoe, and Dr. Parr

and myself taking our turns to walk
Mr. Shelton being lame and [illegible]
to pass on foot. In going a mile further
the [illegible] we soon came
to a broken sandy country with little
or no timber excepting a few stunted
oaks or an occasional grove of small
aspens. After we had walked three
three or four miles we came to an
elevated prairie back of which there
were some small groves and higher
broken country off to the east there is
a descent of some forty or seventy feet
to the river bottom. This prairie probably
contains some two or three thousand
acres, is very level, having scattered
over it some seven or eight remarkable
Indian mounds. They are mostly

Circular of different sizes [illegible]
[illegible] composed entirely of earth. I saw
[illegible] remains of entrenchments about the
[illegible] Clinch river and the [illegible]
[illegible] though I did not have time to
examine the locality [illegible] few minutes
as we were fearful the canoe would
get ahead of us. These are the first
mounds I have yet seen in this [illegible]
[illegible]

The country for some three or
four miles beyond these mounds continues
[illegible]
as good [illegible] land near the river
immediately, succeeded by rough
[illegible]
Before we arrived at Decorah mills
we came to a rough hilly country
the land being [illegible]

growth maple, aspen, Elm ash
Pine white & Black oak. this continu-
-ed on to the Dalles where we arr-
-ived at 12½ oclk. we having rode
16 miles in 5 hours mostly under a
burning sun. as we approached the
Dalles we had to turn off to the right
from the road and follow a small
and very obscure path which we found
much difficulty in following through
the thick undergrowth. as we approach-
-ed the river bluffs the country is very
broken and the path goes down some
altogether some 250 feet
very steep places into the valley which we
found cut up with sloughs that we
were compelled to wade across.

at 2 oclk the coach came along
and again took our seats and rode

on up. Mr Kennedy & Mr Randall walking
from the [illegible] up to the [illegible]
Trap range the valley is from one to
two miles wide. the river spreads
out and with the bottom up into sloughs
and Islands. about one mile [illegible]
the falls we came to the <u>Dalles</u> (so
named <u>Dalle</u>). here the river is nar-
-row (some eighty yards wide) and
is walled in by perpendicular preci-
-ces of Trap rock 200 feet high. after
passing through this range which [illegible]
[illegible] [illegible] and [illegible] [illegible]
wide we came to stratified sand-
-stone with what looked like the
Lower magnesian Limestone on top as
seen from the river, though it may
have been the all sandstone. the

cliff of stratified rocks, the strata of
which seem to lay nearly horizontally
seen along for probably a mile to
the end of Trap range. here the river
is again [illegible] over with fine [illegible]
cliffs of Trap from 175 to 225 feet high. from
[illegible] the most wild rugged and fant-
astic scenery we have yet met
with. the Trap rocks are everywhere
crowned with beautiful pine & cedars,
which with the fantastic forms of the
rocks covered as they are with many
coloured lichens, mosses & ferns, present
probably the most romantic scenery I
have ever seen.

We pitched our tent for the
night right amidst the rugged rocks
of the second range at base of a cliff

some 40 feet high. I saw [illegible]
[illegible] some [illegible] feet above the [illegible]
[illegible] of the river. saw no flowers near the
camp. the willows [illegible]
a fruiting species of Vaccinium, [illegible]
[illegible] and a [illegible] species of [illegible]
[illegible].

Tuesday Aug. [illegible] saw this morning on
the Trap rocks, the smallest [illegible]
species of [illegible] not over 12 in. high.
and a beautiful [illegible] & [illegible]
[illegible] flowers small [illegible]
[illegible]
[illegible] purple, [illegible]
pine. There is also the white [illegible].

Around our camp after breakfast we
up to a second [illegible] above the Dalles
& [illegible] in sight of the [illegible] falls.
walked up to the [illegible]

several hours in examining third trap
range which crosses the river at the
rapids causing the fall. in this range
just above the mill on the left shore there
have been some excavations made with
the expectation of finding copper ore.
after a few hours examination I only
saw some very small pieces of native
copper and several rocks stained &
incrusted with the green carbonate of
copper. It will require much careful
search to pronounce upon the prob-
ability or improbability of finding works
the quantities of ore here seen I to
hazzard an opinion it would be rather
unfavourable. Mr Randall & corps
will remain here some two or three weeks
to ascertain something in regard to this

which will probably set the matter at rest.
We found here in the fissures in which
search has been made for copper ore.
Limestone sandstone & trap partly
congealed together by heat. In the Limestone
we saw Lingulas & Orbiculas. a few
rods above this where the magnesian
limestone comes in contact with the
Trap it is cellular & seems to have been
partly fused, without destroying the
fossils contained in it. The Limestone
Sandstone and veins of Trap are here
too strongly welded together. between
the second & third ranges of trap (about 1/2 mile) the
stratified magnesian Limestone is seen
laying in a perfectly horizontal position
& though undisturbed by the intrusion
of the trap. but of course these isolated

strata must have been lifted bodily up many feet. At the falls there is one of the finest saw mills I ever saw. It averages about 300,000 feet of lumber annually and is driven by water power, which is abundantly sufficient here, there being a fall of some 15 or 20 feet in the river as it passes over the trap. I noticed here also in the trap some 50 or 60 feet above the present level of the river some very perfect pot holes. These trap ranges may be known at a long distance by the growth of white pine upon them whilst the intervening ridges are clothed [with] deciduous trees.

There is quite a village at the falls which contains a fine large frame house and several other neat and tastefully built houses. The land along the St. Croix river is all on down to the mouth has been recently surveyed and a land office is now established at this place.

When I look at the thrifty little village built as it were in a day on the top of one of the ranges of trap I cannot help reflecting how little these thrifty people know or care about the tremendous convulsions of nature that have [illegible] ~~[illegible]~~ [illegible]. I could find enough here to interest me for several days but we are to start down the St. Croix river tomorrow as Mr. [illegible] will probably have returned & be waiting for us.

Wednesday Aug 9th Last night is the first night I have slept in a house since

we left Still water [illegible] expectation of the St. Croix. I must say I [illegible] well [illegible] this [illegible] an unfinished one with neither doors or windows closed it seemed too [illegible]. We were awoke [illegible] by a thunder shower towards [illegible] however it cleared away. At 6 o'clock Mr Randall Mr [illegible] Mr [illegible] & [illegible] came with the two [illegible] the [illegible] leaving Mr Bartlett & [illegible] to remain with Mr Randall returned to make a detailed examination of the trap [illegible] after which they accompany [illegible] through to [illegible]

[illegible] miles below the first [illegible] we examined as we came down a very bluff on the right bank which [illegible] has been described as [illegible] a [illegible] of limestone, sandstone & trap together [illegible] cemented & composed together by heat [illegible] form a kind of [illegible] Breccia. Some of the [illegible] are [illegible] apparently by [illegible] water. The whole seems to have been [illegible] & conglomerated together by the intrusion of the trap, [illegible] the entire rock [illegible] has been in a state of confusion, [illegible] of [illegible]. The whole seems to have been [illegible] and raised up by the trap.

About 2 miles below the Osceola Mills on the left side the river, there

are running from the [illegible] bluffs [illegible]-
-al [illegible] springs which hold in solution
such large quantities of carbonate of
magnesia that have formed by precipi-
-tation along the base of the bluff
masses of Travertine some places near
fifty feet high — Continuing along
the base of the bluff for about [illegible]
[illegible]
Arrived at Stillwater at 7 o'clock P.M.
having [illegible] since morning 35 miles all the
time against a strong head wind, exclusive
of 2½ hours delay at the [illegible] mills.
The first mill to make above Stillwater
is called the [illegible] mill.

Thursday Aug 10. Morning [illegible] &
[illegible] cool. There are showers with strong
gusts of wind from the north last night.
No [illegible] Boat [illegible] [illegible]

no [illegible] in regard to the fate of the appropria-
-tion bill. Cleared off soon after sunrise & the weather
was quite pleasant all day. Spent the day
along the [illegible] at the falls of
[illegible] [illegible] &c.

Friday Aug 11th Morning beautiful [illegible]
the [illegible] [illegible] [illegible]
of [illegible]. Mr [illegible] on board but know
nothing in regard to the fate of the appro-
it has not yet passed the
-priation bill other than that the [illegible]
bill has been attached to it which will be
almost sure to cause the whole appro-
-priation bill to be vetoed by the President.
In case it is vetoed or long delayed it
will place us all in a very disagreeable situa-
-tion, as we are all more than a thousand
miles away from home without a [illegible]
in our pockets. What to do or [illegible]

we cannot proceed until the survey bill is passed, and we can not do anything without money to travel on, and to remain here inactive, whilst Congress & the president quarrel over the appropriation bill will be, to say the least of it a very unpleasant situation. If the President vetoes the bill and Congress adjourns, and the president calls a session and before another bill can be passed & drafts and orders from the department to go on, the season will have been so far advanced that we can do little or nothing before the weather will set in.

Mr. Macy & Dr. Simmons went down to Galena on the same boat Mr Macy came up on. The Dr is still in very bad health and thought a trip on the boat would benefit him. Mr Macy had only came up to open a letter that Dr. Simmons wrote him was in the Office here for Dr. Owen on which he expected there might be some instructions from the department as to how we should proceed in the present circumstances, but on perusing it he found it related to other matters.

Mr. Pratten and myself have arranged so as to how we are to act in case we can hear nothing definite from Washington in the course of the next week. We intend to go to work and make a large skiff of sufficient size to carry our baggage & tents provisions & tools from the store belonging to the corps enough provision to last us down to the mouth of the Ohio and descend the

rocks on the Mississippi River down to
the mouth of the Ohio, making also
a complete collection of the miner-
-als & fossils ~~[illegible]~~

Saturday 12 & Sunday 13th rained almost
incessantly the whole time.

Monday 14th Cloudy with strong wind from
the north with occasional fine mist
disagreeably cool. A gentleman who arrived
here today brings the news that the U.S. Senate
struck out that part of the River appropriation
bill which provides for the improvements on the
Savannah River. If this is true and the House
concur the president will not veto the bill
and we will yet be able to go on with the
Survey.

Tuesday Aug 15th Cloudy. Mr Pratt
[illegible] and myself went up the river [illegible]

[illegible] about 5 miles to examine
for a deposit of fire clay said to occur in
that neighborhood. After much search
we at last found the locality. The clay
is tough white variety of good quality
is free from Iron ~~sand~~ lime or any
alkali but from all indications the quan-
-tity is to small to be of any economic-
-al value. It is found in single lumps
and thin beds through a stra-
-tum of very white sandstone
about 40 feet in thickness (20 ft above the river [illegible]) which is
overlaid by about 40 feet of drift and
Immediately underlaid by a coarse
grained impure yellow magnesian
limestone, the thickness of which we
did not have time to ascertain. This
whole stratum of white sandstone is

as we ascertained by observation with
[illegible] level above the limestone bluff
on the opposite side the river. This
fact together with the general appearance
of the rock lead me to infer that this may
be the same white sandstone that
occurs at Fort Snelling beneath the
shale limestone
~~[illegible] rocks~~. The country back
of this is very broken and overgrown
with an almost impenetrable thicket
of small undergrowth. The soil is good.
much better than near Stillwater.
On the other side, I forgot to mention
that this white sand varies from the fine-
= ess of chalk to that of grains as coarse (as common) rice
but that after exposing it for hours
on [illegible] the [illegible] [illegible]
[illegible] with specimens and returned

to our boats. after descending to the valley
we saw a very pretty little clear lake in a
small bottom prairie. here we saw in flower
many pretty species of golden rod-
(solidago) Primrose, cardinal flower
a large white gentian. -
As we went up we collected quite a
number insects (see list on front leaf)
It was dark before we arrived at camp
hungry and fatigued. saw as we came
along many fire flies (Pyrolampis
scintillans. Say)
Wednesday Aug 16. Spent the day copy
= ing some sketches of scenery etc made
up the Blue earth & St. Peters river
reading, daily Tribune Annual
and packing some minerals collected on
the Lake & River St. Croix

Thursday Aug 17th Morning clear
and cool. Several of the last mornings
were cool — mercury standing at
from 48° to 54°. during the day it
rises however to 76°. 77. & 79°. The trees
and shrubbery begin to show their fall
foliage. The yellow leaves and the fading
of many pretty flowers together with chilly nights &
mornings remind one that he is not in
the latitude of Old Kentucky. I have
observed in the plants of the North that
the spring flowers, as might be expected, bloom
much later than the same species further
south. whilst the summer and autumn
flowers come out sooner & mature earlier
and quicker than the same species
further south.

Friday 18th Pretty clear day

Camp visited by some New York Ladies
and Gentlemen, who took a ride in our
bark canoe, and overwhelmed us with
questions in regard to Camp Life, our
adventures with the Indians &c.

Spent most of the day constructing
sections, reading, writing &c. We confi-
-dently expect some definite news
from Washington by the next packet
which has been due since Wednesday.

Saturday 19. Mr Mac arrived
on the Str. Ld. Franklin today at 10
o'clk A.M. Three thousand dollars have
been sent on for us but the fate of
the appropriation bill is still unknown.
We have concluded to get ready
to go on with the survey. and by the
time we get down to the mouth

of the Chippewa which Mr. Macy
~~[illegible]~~ accrued we will have some
more satisfaction on. Dr Shum-
-ard has given him an account of
the death. Mr. [illegible] on
with his part of the survey. Mr.
Macy went on round on the boat to
St. Peters to hire voyageurs and bring
over our Camp Equipage.

Cool with drizzling rain all
day

Wednesday 20th Augt. Cool rainy morning
[illegible] all day.

Thursday 21st Augt. Clear

Friday 22nd Augt. Clear Mr. [illegible]
[illegible] this morning and Mr.
Macy coming up the lake about 2 miles
from the town. As Mr. Macy had left [illegible]

[illegible] make [illegible] for
[illegible] they [illegible]
[illegible] the nature of the [illegible]
[illegible] that instead of [illegible]
of [illegible] any of the [illegible]
[illegible] as a separate camp [illegible]
[illegible] My investigations [illegible]
[illegible] to a definite [illegible]
[illegible] is now being laid off into townships
[illegible] report on each
Township is that the department
[illegible] whether or not the actual
north subdividing into sections
or sections.

Monday Aug 25 Spent the day in
preparing my tent equipage.

Tuesday 26th [illegible]
[illegible] with Mr. Russell that I am to

for my Book [illegible]

got his horse after he finishes his in-
-vestigations about the falls of [illegible]
which will occupy him about ten days
and having nothing to do as the man
here as Mr [illegible] is to take my horse
[illegible] up to the [illegible] mills, I am
to accompany Mr Randall and wait
him at the falls till he gets through
there and then take the horse and go
[illegible] the country to buy provisions.

I walked out this morning
to [illegible] Mr Bartlett for Mr [illegible]
[illegible] I saw in bloom along the road
among other flowers many fringed
gentians. saw the many they [illegible] that
blooms so late in [illegible] in flower [illegible]
may be seen [illegible] as the flowers
[illegible] all up [illegible]

a [illegible] head at the top. [illegible]
[illegible] Mr [illegible] with [illegible]
[illegible]

Arrived at Mr Bartlett's at 12 o'clk
[illegible] the horse and came up the
water as soon as possible. got away [illegible]
[illegible] started up to the [illegible] mills
at 3 o'clk. arrived there in the dusk of
the evening. found Mr Randall there ready
for me. [illegible] supper and [illegible]
[illegible]
all night. [illegible]

Fri

Friday 25th Started up with Mr.
Randall at 7 o'clk. rainy weather
[illegible] about saw along for some
miles below [illegible] mills all the
way up many large boulders
from the trap ranges, many of

which I could recognize as being
identical with many plants among
the ranges. saw many species of
goldenrod, gentians &c also in
wet places Lobelia Siphilitica.

arrived at the falls 5 o'clk in
the evening. found Dr. Parry, Mr
Bartwell & Col. Jacob's his company
in the same old house. measured
the river (Dr. Parry's [illegible]) at the
narrowest place where it passes
through the Trap range. It was
only 50 ft. wide. In growing
about here [illegible] [illegible], and a small
species of blackberry with angular stems
with hooked prickles called 'saw-tooth
grass' or weed. Dr Parry has discovered
on the rocks here a beautiful fern
it is a Woodsia—he thinks it is an
undescribed species

Saturday Aug 26— morning cloudy
and warm. Went down along the right
side of the river among the rocks in
the gorge to see some large pot
holes. one of them measured 5 ft across
the top & 26 ft deep. there are several
near this of nearly equal size and
many smaller. all of them are
some 20 or 30 feet above high water
mark of the river at this time, so
that it is evident the river has deep-
ened its channel that much since
it flowed over this part of the range.

We gathered here on the rocks
a great variety of beautiful mosses
and lichens. The Ravine and

beautiful flowers of these add
much beauty to the scenery among
these rocks. Saw today the first
red maple I have met with in
this country. gathered seeds of
corydalis. [illegible]

Rained all the afternoon

Saturday Aug 27th, Cloudy morning with
occasional rain [illegible] sun shine. walked
about over the second range. saw on
the lower side of the range on the
right side the river a conglomerate
somewhat similar to that at com-
-promise point 2 miles below
it also has lingulae in it many
of the pebbles are well rounded e-
-vidently of the drift formation
this shows that the second elevation

of these trap ranges which has rais-
-ed & [illegible] the rocks so ([illegible]
[illegible]) and raised the first below [illegible]
[illegible] above the river, must have
taken place since the deposition of
the drift.

Monday Aug 28th clear very warm
day. walked about with Col. Jacob [illegible]
a considerable extent of country. went
down below this (2d) range to the stra-
-tified rocks (about 1 mile west) [illegible]
[illegible] Do 1.2; which we found by
measurement with a tape line to be
50 feet thick. some 60 or 70 ft above
the river. we saw in it many bits
of trilobites. It is overlayed by about
6 ft. of drift. Saw growing on
the trap Juniperus Communis

[illegible]
Thuya occidentalis

ced Juniperus virginiana
along on the high ridges we
found many fine black ash.
In the afternoon we went
up about 1/2 mile N.W. to
see outburst of trap on
the high land, near 380 feet
above the river. It is here
more distinctly porphyritic
than at any other place I have
seen, having large distinct
crystals of flesh colored feldspar
with more[illegible]
ones of [illegible] green epidote quite
so in a paste of fine green
stone. this mass covers
about 10 to 20 acres, and
only rises about 30 feet in

the highest places above the
[illegible]
surrounding surface. the
[illegible]
surface of this entire mass is
embossed and rounded off by
alluvial action. all the N.W.
sides being worn down smooth
whilst those to S.E. are more
angular. we saw, off to
the South of this, at a dis-
=tance of about 1/4 of a mile
a similar, but smaller, outburst
which we did not visit.
West of this there is an ex-
tensive Tamarack swamp. there
is much good timber grown
in the region near the falls.
I see some fine groves of sugar
maple, Elm, Oak, aspen &c (see [illegible])

and every where, on the Sand Plains.

Tuesday Aug 29th went down with Col. Jackson & spent several hours in the region of the great pot holes. we saw one still larger than any I had seen — It measures 26 feet in diameter, across the top, is now some 8 or 9 ft. deep, though It may be twice that depth as it is now partially filled with Earth masses of trap &c. It is very evident that this rock has been elevated some number of feet since these holes were worn as the fractured condition of the rocks shows, of their higher position as compared to the others of the [illegible]

When I first came up the river to this place I thought the river had cut its channel through this range, though I was surprised that the rocks on each side did not show more evidence of the wear of the water. further obser-vations convinced me that the river formerly ran over that part of the range now so full of pot holes, till an other elevation of the trap which occurred after the drift was deposited Rent asunder the entire range & formed the chasm in which the river now runs. I am lead to this con-clusion first from having seen so many other great cracks & rents in the rocks, some of which are many ft in width. 2d from the great fractured condition of this part of the range. (some of which cracks or fissures break the pot holes in such a manner as to prove that the cracks are of later date than the wearing of the holes)

3) the great depth of the river in the gorge [illegible] the angular & unworn condition of the surface of the rocks along the walls in the chasm.

I went on a few hundred yards below and made a sketch of the standing rock – [illegible] in fixing my small [illegible] [illegible] to use in my [illegible] [illegible] trip.

Aug 30 Wednesday. Went down with Col [illegible] about a mile below (a short distance below [illegible] [illegible] see the sedimentary rock [illegible] last) here we found the several [illegible] of formation [illegible] exposed and [illegible] on the [illegible] as represented in the [illegible] at the back part of the book. We [illegible] here along the face of the cliff [illegible]

a thin incrustation of the green carbonate of copper. Also, efflorescing on the surface of the same rock (and [illegible] place where we saw the green car[bonate] of copper) nitrate of Potash.

The surfaces of the thin laminae of this rock are covered with pieces of [illegible]. At one place it shows a shining surface of mica the first I have seen in this rock – anywhere)

As we came down a deep ravine with [illegible] precipitous [illegible] [illegible] [illegible] [illegible] [illegible] with [illegible] [illegible] with a large thicket of [illegible], we saw in the sand a fresh track of a large bear.

Thursday Aug 31st Last night we [illegible] [illegible] cool [illegible] [illegible] [illegible] [illegible] collected [illegible] [illegible] from

([illegible])
50 feet fall in the river [illegible] 35 ft [illegible]
formation No 1st just below the falls
one bed in this formation contains
much Alumina and sulphuret of
Iron which forms by decomposition
decomposition Alum & copperas
Spent the afternoon packing
specimens.

Friday Sept 1st Cool night
morning clear and pleasant. spent
the day assisting Mr Randall & Col [illegible]
determining the boundary [illegible] of the
Trap [illegible] on this side the river.
As yet we have [illegible] scarcely
any evidence that this rock contains
[illegible] of ores. We find occasionally a
little green carbonate of copper and
sometimes very small bits of native
copper but nothing like veins.

[illegible] of these minerals are limited [illegible]
quartz, [illegible] spar [illegible] and [illegible] few
very small crystals of [illegible] oxide of iron.
The falls of the St Croix was the
[illegible] of [illegible] battle between the Chippeway
and the Sioux and [illegible] the Sioux were [illegible]
the Chippeway [illegible] by their [illegible]
chief of the [illegible] Mahk Ojeeg or white
fisher, [illegible] 1798 and was [illegible]

Saturday Sept 2nd Morning clear Temp
last night, as shown by [illegible] thermometer
40° Spent the day with Col [illegible] among
the trap [illegible] nothing [illegible]. Saw [illegible]
of the [illegible] on the rocks also the
same [illegible] on the [illegible] on
St Peter. The whole surface of the
[illegible] bank on the high [illegible]
yellow with solidago. Temp at [illegible]

in most part of Sec 13 — [illegible]
-all gone down to still water.

Sunday Sept. [illegible]. [illegible]
[illegible] last night rained
nearly all day.

Monday Sept 16th violent thun-
-derstorm last night again [illegible]
this morning. [illegible] myself
[illegible]
[illegible] on the [illegible]
[illegible] to examine the overland
boundary as well as [illegible]
of the [illegible]. After getting [illegible]
[illegible] examination on the right
side we crossed over and followed a
branch of the river that cuts off so
or [illegible] few [illegible]
as to form a large island. after we
had gone down this about one
mile we came to the mouth of

a [illegible] of [illegible] clear water [illegible]
[illegible] from
the high land to east. By the time we [illegible]
here we had killed 1 Blue [illegible] and 3 wood
ducks, three Pheasants and [illegible] 2 [illegible]
and 1 great [illegible] ([illegible]) [illegible]
[illegible] pretty hungry we stopped here and
[illegible] of the pheasants and [illegible]
[illegible] with some [illegible] for
[illegible]
[illegible]
= [illegible]
[illegible] of [illegible] day [illegible]
stream [illegible]
[illegible]
= [illegible]
the high land [illegible]
[illegible] of [illegible]

[illegible] on the top of white stem, a large crown &c
Tiber larum, ash, heckling &c there were also
many beautiful flowers on the water [illegible]
I wanted to get specimens of the [illegible] (of the specimen)
specimen of [illegible], and that peculiar [illegible] of [illegible]
[illegible] [illegible] belong to me here
when the soil was moist.

After eating dinner we ascended the
high range on the north side of the creek
[illegible] were 150" above the level
and we had a fine view of the surrounding
country. we saw in the rocks here small
small pot holes and other evidences
that once these high banks was near the
bed of a running stream. we descended to
a low prairie at foot below where we
were strolling - to the east of us Col
Jacobs came very nearly stepping upon
a large adder (viper) some two or 3 feet

in length he threw upon it a [illegible]
of [illegible] and [illegible] wounded it. It appears to
escape among the roots of the [illegible]
In the low prairie we came to a [illegible]
stream of clear cold water in which we
saw many tadpoles. [illegible] the large
[illegible] [illegible] we had
[illegible] along the banks of that creek
[illegible] [illegible] [illegible]
[illegible] [illegible] many of
these in little [illegible]
surrounded by [illegible]. All these [illegible]
must have been [illegible] by the [illegible]
many feet. upon coming of the [illegible]
side of the prairie we came to a [illegible]
[illegible] [illegible] in a [illegible]
a [illegible] ([illegible])
although the [illegible] not [illegible]

the [illegible] [illegible] Smith has recently [illegible]
It in its unfinished state he has a beautiful
tract of land on higher elevation to the north
lying in rich [illegible] prairie
East of his house about 1/4 of a mile, embracing
about [illegible] of acres the whole tract of [illegible]
between two ranges of [illegible] timber [illegible]
slightly east of south the other west of north
and join together some 2 miles north
of [illegible] in the form of a V. He has cultivated
some 20 or thirty acres in oats corn potatoes
turnips and other garden vegetables all of
which were planted since the 1st of July.
his oats are very fine, his potatoes excellent
and as large as I ever saw. But his turnips
radishes onions rutabagas &c excelled any
thing of the kind I ever saw. I measured
several of them and with a tape line
that ranged from 18 to [illegible] inches in circumference

[illegible] and [illegible] [illegible] in [illegible] they were as
sweet and mild and tender as any [illegible]
some of [illegible] [illegible] radishes some of [illegible]
[illegible] as [illegible] to the [illegible]. I saw
some red onions that measured 12 inches
in circumference. [illegible] done very
well. [illegible] melons will not get to
come to perfection, [illegible]
[illegible] [illegible] planted a little
to the climate
[illegible] they [illegible] [illegible]. I [illegible]
[illegible] [illegible] [illegible] into [illegible]
[illegible] that all [illegible]
from the sod and the [illegible] of this plant
[illegible] [illegible] for any part of the [illegible]
[illegible] [illegible] which [illegible]
[illegible] in the climate. He [illegible]
[illegible] [illegible] Cultivation [illegible]
[illegible] his [illegible] neighbors [illegible]

[illegible] enough [illegible]. They have
not yet begun to cultivate, wheat [illegible]
[illegible] double and [illegible] on
[illegible].

Some of our [illegible] friends, Mr.
Arnold [illegible] [illegible] very since he
[illegible] a [illegible] on [illegible]
[illegible] from the house and a few [illegible]
and a few days after with some friends
[illegible] they found a large bear
[illegible]
as they [illegible] he [illegible] down [illegible]
[illegible].

[illegible] the Temp. [illegible]
[illegible] of the
[illegible] to the [illegible] I noticed that the
needle of the compass was deflected, when
I saw the [illegible] on the rock
51° East of North, and [illegible] [illegible]

East of north and [illegible] to the [illegible]
[illegible] [illegible] [illegible] on
the rock.

We returned to the [illegible], got our [illegible]
[illegible] and returned at camp just after
dark. We had brought with us some
[illegible] [illegible] large [illegible] [illegible]
[illegible] we showed them to [illegible]
both [illegible] did know what they were, and
would hardly believe us [illegible] we told
them they were [illegible]. They were so
much larger than any thing of the
kind he had ever seen.

Tuesday Sept. 5. This morning clear [illegible]
[illegible] cool last night. Temp. [illegible]
[illegible] thermometer [illegible]
night as low as 40° [illegible] to 78°
[illegible] the day [illegible] the [illegible]

me nothing remarkable.

Wednesday Sept 6th. pleasant very night cool. Spent the day among the Trap rocks saw nothing new. Mr Russell returned this evening from Stillwater. Col. Jacks and myself have nearly completed the examination of the ranges. I am very confident that they contain no [valuable] veins of mineral. Just heard by Mr. Russell that the Oregon bill has passed with the Missouri compromise attached. glad to hear it is settled without further difficulty.

Thursday Sept 7th saw nothing new.

Friday Sept 8. busy labeling specimens till 9 o'clk A.M. when I started for Stillwater. arrived at Marine Mill at Seven o'cl. stayed all night

Saturday Sept 9th started soon after breakfast up'd the high elevation just below the mill as directed by Mr Russell found it to be composed chiefly of No. 1. could not tell what it is capped with. there being no exposure of the strata. It is underlaid by No. 2

Saw a locality below Marine Mills where masses of limestone No. 2. are scattered over the surface (in place) like those at White Earth Prairie.

arrived at Still water 3 O'clk P.M.

[illegible] ready to [illegible] in the morning.

Saturday [illegible] 10th [illegible]

Started [illegible]

[illegible] the mouth [illegible] River [illegible]

[illegible] ferry [illegible]

[illegible]

[illegible] the [illegible]

brought [illegible]

[illegible]

[illegible] in the [illegible] of the [illegible]

a [illegible]

[illegible]

[illegible]

[illegible]

[illegible] more [illegible]

[illegible]

[illegible]

[illegible] Started [illegible]

arrived at [illegible]

the [illegible] I found [illegible]

It was dark so I did not [illegible] any of the

[illegible] my supper [illegible]

[illegible] after which I [illegible]

and enjoyed a good night [illegible]

[illegible] the night. My lodging [illegible]

in a [illegible] in a little [illegible]

[illegible] the night [illegible]

Country from mouth [illegible] River

[illegible] consisting of [illegible]

[illegible] which [illegible]

[illegible] or [illegible]

Sandy [illegible]

[illegible]

[illegible] 81 [illegible]

[illegible]

Monday Sept 11th bright clear cool
morning. Over traveled a pretty clear
stream about 25 ft wide and from 6 to
12 in deep where I crossed it. It runs
rapidly on a solid rock bottom of Mag-
nesian limestone.

After cooking and eating break-
fast I crossed the river and followed
a band of trail some 2 or 3 miles w[illegible]
[illegible] turned to the south
and consequently I left it going on
a South East course. After I had
gone some 2 or 3 miles I struck the
head of a small stream which ran
to the south, supposing it one of
the tributaries of Rush river I followed
it down some 2 or 3 miles without
coming to any other stream or

perceiving any considerable in-
crease in the size of the [illegible]
down. and it was totally late in
the afternoon and I had no certainty
of finding water between this and
night if I start on my course to
the east or South East, I ~~have~~ pitched
[illegible] and cooked & eat supper. I think
Rush river must be nearly due
East or north East of me as I have gone so far
South. at any rate I intend
going due east in the morning

Tuesday Sept 12. beautiful clear cool
morning - white frost during the night. Started
early and traveled over a high ~~stony~~
rolling prairie, about 6 miles in an
East course when I came to a valley
having 50 ft deep cliffs with

[illegible]

Then descending through the thick undergrowth to the bottom we found a beautiful clear stream of water [illegible] larger than the creek which crossed my path [illegible] of Beech Creek. After crossing I found myself in a densely timbered country [illegible] [illegible] & thrifty sugar maple white and red oak, [illegible] white walnut [illegible] making the [illegible] very slow and tedious. I had been informed that there is [illegible] across the [illegible] valley, I [illegible] [illegible] to [illegible] [illegible] got down that [illegible] instead of going [illegible] which would be [illegible] the [illegible] [illegible] but [illegible] [illegible] amongst

the undergrowth. After going gradually twenty or twenty five miles through a country all of which is a rich [illegible] [illegible] and with tolerably level surface I came to the head of a shallow but broad valley [illegible] [illegible] [illegible] [illegible] probably lead to [illegible] River I commenced descending it, but I had not gone more than a mile when I came amongst a thicket of thorn, prickly ash, [illegible] [illegible] & through which I passed about a mile with great difficulty. Supposing that I might get along better near the left slope I worked my way there and soon found myself in the midst of an almost impenetrable thicket of alder [illegible] matted and bound together with grape vines &c so that I was compelled to [illegible]

with my tomahawk a road through
where the horse could pass. I found
this so slow and laborious a way
of getting along that I was glad
to turn back to the stream finally
passing on in this way,
sometimes riding and sometimes
cutting a road & leading the horse,
some distance I at length began
to see evidence that a strong
stream runs down this valley
after heavy rains, and as its bed
in place of meandering I was at
last compelled to ride in it altho
it was so full of holes and boulders
stones ~~the~~ which were hid by
long grass, that I was almost
every moment exposed to the

danger of being thrown over the
horses head. But it was the only
chance to get along as I was walled
in so, as it was on either side by
an impenetrable thicket. I went on in the
way following the meanderings of
the creek at about the rate of one
mile an hour, till I thought it
near time to camp; but I concluded to go on till I found a
pool of water like I had seen
not far back. At length I came
to water & was looking for a place
to pitch my tent, when I cast
my eye down the valley & to my
great delight saw a stream of
clear water running briskly
which I supposed, along the base of the Ensagatchy
to the S. E. I hastened on to it

expecting to find a good road leading down ~~the~~ it valley. But to my great disappointment I found the shore on both sides an impenetrable thicket back of which was a [illegible] already clothed with every kind of undergrowth the rough broken country, and on the right a [illegible] precipice. To camp here was my only alternative so I picketed my horse and turned my pony loose to feed on the grass. After kindling a fire I cooked ~~[illegible]~~ a small bit of bacon (small because I had but little left of anything to eat — I did not know how long I would yet be compelled to wander in the wilderness before I could reach any settlements & I had no gun with me) & eat supper. After supper I threw some more wood on the fire & was about to spread my blankets & lay down when

I heard the low growl of some wild animal in the bushes a short distance behind my fire. I seized a blazing brand ~~[illegible]~~ & threw it as far as I could in the direction of the sound. For a few moments all was silent as death. Then in a few moments ~~[illegible]~~ a wolf commenced to my left howling up on the hills, this was soon answered by another on the right & another & another till the ~~[illegible]~~ whole valley seemed to be alive with them. All manner of the wildest and most unearthly sounds I ever heard. Then again all was still & I began to flatter myself they had left when I again heard the same low growling close to my thicket in the bushes. I again threw several brands of fire. I heard no more of them for some ten or fifteen minutes after which they made the wood ring with

one from the ~~angel~~ [illegible] direction approaching close to the camp, then receding, where I think hounds of fear took the trail. By this time the full moon began to rise above the high hills by which I was hemmed in on the [illegible]. All this time it was my mind on the valley. I had often looked upon the moon with feelings [illegible] as I did the present, as she sent her [illegible] light down the valley, the [illegible] [illegible] and [illegible] [illegible] look in the distance. Feeling very [illegible] to get rid of them, & being very much fatigued lay down in my tent. How long I lay I do not remember. I had dropped into a [illegible] of sleep which I dreamed of other days when I was awoke by the [illegible] yells of the wolves close to my camp [illegible] jumping up I discovered my fire had nigh burned out, I threw on some more

wood, of which I had gathered a good quantity [illegible] to the [illegible] [illegible] Changing my [illegible] the wolves retreated farther off. I could not tell [illegible] what would be [illegible]. The moon had not yet passed noon, and there was not a cloud to be seen, [illegible] nothing [illegible] soon I soon discovered the moon [illegible] was just passing behind the shadow of the earth. In a few minutes the eclipse was total and I was in a darkness of [illegible] [illegible] even no moon in the [illegible]. The wolves [illegible] [illegible] [illegible] but in a short time the old dry tree against which my fire was built caught fire about the roots, and [illegible] the flames darted ~~[illegible]~~ up the trunk to the branches casting a ~~cheerful~~ bright [illegible] of light around on everything around so that I

could have seen to find me a ford for
some distance off. [illegible] afforded [illegible]
of the stream and [illegible] me and my
after the [illegible] [illegible] I
Langdon, but could not sleep all [illegible]
morning came

~~Wednesday~~ Thursday 3d up this morning early
[illegible] and my [illegible]
and started. [illegible] the stream I was sure
must be the Sangsaki, and that the [illegible]
and settlements must be a long distance
below me. I at first tried to work my way
through the [illegible], but I soon found it impossible
to get along in the thicket. I soon saw [illegible]
my way [illegible] to leave the river and
[illegible] on the high land and travel
[illegible] as I could [illegible]
[illegible] the river. Last night was

my way with great difficulty to the top of
the hill and started on my course. At 4 P.M.
[illegible] I began to [illegible] I could not [illegible]
[illegible]
[illegible]
[illegible] this way. Alas, I [illegible]
[illegible]
I [illegible]
difficulty and [illegible] the [illegible] began
expecting to find some of the upper settlements
but [illegible] going to the [illegible] I [illegible]
but the Sun set and [illegible] weary [illegible]
[illegible] on the river bank I saw the lodge
poles of an old Indian camp.—At the
[illegible] of the [illegible] I began for the
first time to have some fears. I [illegible] that
the Sangsaki was a [illegible] stream [illegible]
[illegible] Chippewa Land. [illegible]

little further down I saw a single
solitary [illegible] lodge on a [illegible]
[illegible] and [illegible] that I was on the right
[illegible] and that the main [illegible]
[illegible] by a long distance on. So I [illegible] all
through the thick
day cutting & tearing my way on down
the valley. The rain all the time pouring
down in torrents. At night [illegible]
& weak
exhausted with fatigue and hunger I pitched
my tent [illegible] a long fire [illegible] to [illegible]
to dry my clothes & blankets. [illegible] the rain
[illegible] and [illegible]
[illegible]
[illegible] during the night
I [illegible] wolves [illegible] at a distance but
they did not appear.

Thursday 4th still sprinkling rain —
[illegible] the [illegible] grass dripping with water —
But [illegible] I [illegible] on [illegible] my [illegible]

[illegible] up everything [illegible].

I [illegible] on down the valley [illegible]
[illegible] twenty [illegible]
with the [illegible] of [illegible] I
[illegible] the [illegible]
[illegible] all the way by [illegible] that the
bottom on the other side [illegible]
a beautiful [illegible]
[illegible] I tried repeatedly to [illegible] but the
rain had so swollen the stream & the
bottom was so swampy that I could not.

valley
At length I found the bottom so swampy
and full of undergrowth that it was impos-
-sible to get any further down it and I was
again
compelled to go to the high land, by ascending
a steep hill some five hundred feet high. As
I reached the summit I [illegible] a [illegible]
the thick foliage of a tall grove of aspen [illegible]

[illegible] the valley to the [illegible] and [illegible]
[illegible] of [illegible]
[illegible] [illegible]

of water, which I at once knew must be Lake Pepin.

I now [illegible] at once that I had been [illegible] by the imperfect map of the county. I had been travelling by [illegible] instead of [illegible] down the [illegible] I had [illegible] [illegible] [illegible] on the [illegible] [illegible] in [illegible] [illegible] [illegible] of Lake Pepin. I [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] and [illegible] [illegible] [illegible] along its shore. [illegible] [illegible] on [illegible] [illegible] till near [illegible] [illegible] [illegible] [illegible] there. I pitched my tent, built a large fire and [illegible] [illegible] [illegible] [illegible] [illegible] in [illegible] [illegible] [illegible] Blankets, [illegible] [illegible]

[illegible] a few [illegible]
I lay down and slept soundly [illegible] [illegible]

Friday. Sept 15th [illegible] [illegible] [illegible] [illegible] [illegible] and I was [illegible] to see [illegible] I was [illegible] [illegible] [illegible] morning. I [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] and [illegible] after I had gone some [illegible] [illegible] I [illegible] all at once, from the [illegible] to the [illegible] of a [illegible] [illegible] [illegible] I [illegible] [illegible] [illegible] to the [illegible] of the [illegible] but [illegible] [illegible] [illegible] see nothing [illegible] [illegible] [illegible] I [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] by I [illegible] a [illegible] [illegible] and a [illegible] [illegible] [illegible] of the [illegible] [illegible] [illegible] [illegible] the fog, and [illegible] to me [illegible] one of the [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] to the [illegible] of [illegible] It was one of those ~~[illegible]~~ [illegible] which [illegible]

as has no pencil can ever describe
five hundred feet beneath my feet, Incessantly
go to the East and west lay the Lake with
all it beautiful bays, promontories, Islets
young & verdured [illegible] whitish throwing to the [illegible]
Very like a vast Pyramid
[illegible] [illegible] [illegible], And I
[illegible] as I was [illegible] fast year [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible] the
[illegible] to [illegible] [illegible] [illegible] from the
[illegible] hours.

Passing on with the [illegible] on this large
table [illegible] [illegible] [illegible] making my
way to catch the glimpse of some [illegible]
we along the [illegible] [illegible] I had [illegible]
[illegible] a very beautiful [illegible] for the last
[illegible] [illegible] [illegible] I [illegible] a [illegible]
[illegible] I [illegible] [illegible] a [illegible] [illegible]
[illegible] so I [illegible] a rocky declivity [illegible]

at one time some [illegible] thought of getting
a [illegible] [illegible] any other circumstance
Even found on the bottom I thought I could
[illegible] [illegible] [illegible] [illegible] [illegible] I was
disappointed for just as I came on the
edge coming in to the very base of the
precipice to go back up where I had come
down seemed next to impossible, and a
Thought of getting [illegible] [illegible] [illegible] about
[illegible] [illegible] of the [illegible] — which to do
[illegible] [illegible] [illegible], while I was [illegible]
Trying to decide some plan to get out of the
[illegible] I [illegible] [illegible] [illegible] the [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]
toward me. They were [illegible] [illegible] [illegible]
[illegible] up to [illegible] [illegible]. They [illegible]
to [illegible] [illegible] [illegible] [illegible]. They looked
at me with such astonishment to see

a man and horse in such a place that I really believe they had some doubts whether I was real flesh and blood or some phantom that had let down there from the clouds.

I asked them if they could speak English when they pointed to their ears and shook their heads as much as to say they could not understand. They pointed to the hill back of me then at the horse and asked by signs if I had come down there. When I made the Indians understand [illegible] [illegible] and some wonder.

I at last made them understand by signs that I wished them to take my horse [illegible] [illegible] in the canoe and [illegible] me across the [illegible] [illegible] I [illegible] [illegible] on the prairie. They soon came and [illegible] [illegible] [illegible] [illegible] in the canoes and one of them got in and paddled off, I sat in the stern to lead my horse and let him swim. We soon reached the other side, and I gave each Indian [illegible] shook hands with them and started [illegible] [illegible] along [illegible] on the prairie which I found to be a very sandy poor soil. After going [illegible] a few miles [illegible] on my right I saw the [illegible] lodge of [illegible] Indians. I [illegible] them further into the [illegible] from the river [illegible] [illegible] and [illegible] and [illegible] [illegible] by the [illegible] [illegible] to my [illegible] [illegible] of the [illegible] [illegible] I had come up from the mouth of [illegible] River [illegible] [illegible] [illegible] [illegible] [illegible] the mouth of [illegible] I could not go below [illegible] [illegible]

I could not cross the Island I was hemmed in above and below by swamp — on the west by the Lake (or rather river) for I was not at the head of Lake Pepin) and on the East by an interminable wide swamp.

I at length concluded to go down the river bank, pitch my tent (it was now late) and ~~wait~~ take the first steam boat that came along, either up or down — If for nothing else only to avoid starvation. Whilst I was fixing my tent, I heard some person say "hope are you see [illegible]" I was [illegible] to see a white man in a canoe at the Island. My situation was soon explained to him. he is the farmer at Red wing Village from [illegible] I had passed it as I came up on

the [illegible] as I would come [illegible] left [illegible] the Prairie. He said he was coming up in the morning & would bring me some provisions, and bring me all the information he could get from the Indians relative to the road through to [illegible]

Saturday Sept 6. Morning cloudy — Thunder storm and hard rain — Mr [illegible] from Red Wing Village came up about 10 o'clock this morning with plenty of [illegible] a large piece of fresh bacon and [illegible] of coffee some sugar & a fat beef [illegible] to [illegible] a short time after [illegible] came [illegible] hard storm with thunder and lightning [illegible] [illegible] and [illegible] mouth of [illegible] river [illegible] go down to the mouth of Chip[illegible] river

Expected showers during the day

Saturday Sept 17th clear frosty morning rose early & started down for the mouth of Rush River, having learned through the Indians that there is a company there mining the [illegible] some of them I hope to get to assist me across. travelled all day till near sunset, yet such is the broken and brushy nature of the country, that I did not reach there and had to camp on a high elevation without water.

Sunday Sept 17th Started early. morning cloudy, soon commenced rain. got across Rush Riv. by stripping off and wading and leading the horse across, then carrying saddle, saddle bags, blankets clothes &c. cleared off about the time I got across, after cooking. I struck off in a direction a little North of East hoping to find the Eangallie River. after I had travelled with great difficulty over a rolling country on which there is scarcely any trees but a tangled thicket of Aspen, Alder, Cottonwood &c as near as I could guess about 14 miles I came to a large valley bearing S.E. as it was now late I did not go to other side of it where the stream lays to see whether it is the Eangallie but camped.

Monday Sept 18. rained last night - continued to do so most of the day. Started early to see the river. after [illegible] the

day in the most incessant toil amidst
the dense thickets, Tamarack swamps, wind-
-falls &c I succeeded in making my way to
the stream, and found it to be near about
the size of Rush River (Range 5.E) but owing to the
swampy nature of the bottom & Banks
which latter were very steep I could not get
across it. I tried in vain at several places
but could not. My horse immediately became
mired, and with difficulty extricated himself.
As my provisions were again nearly
out I gave up all hope of getting through
this way to [illegible] River, and started west
in order to work my way back to Rush
River & thence to the point I am aiming at. The
King Villagesite is the only point for
many miles where I could get in better
food and in addition to that, it is

the only place I could with any
degree of certainty depend to get any
to eat, before I would suffer severely with
hunger if not starve, for although there
are some few settlers lower down on Rush
River I might, in such a broken &
rocky country as this starve before
I could find them. after getting once
fairly out of the River Bottom I pitched
my tent on a high ridge — without water.

Tuesday Sept 19. Morning cloudy
& rain during the night. arose early and
started slowly west — slowly because my
horse had now become so sore by dragging his
limbs through the brush, that he could
not be induced to go out of a slow walk.
arrived in sight of Rush river in the
Evening, and seeing a heavy shower

coming up in the wet, I had barely time to half pitch my tent and put everything in it before it commenced raining very hard, although it is and has been all day, uncomfortably cold.

Wednesday Sep 19 morning clear. White frost [illegible] Lay fog a stiff [illegible] after [illegible] went to [illegible] by the [illegible] the [illegible] of the long [illegible] [illegible]

Thursday Sept 20th morning [illegible] and [illegible] up to the point at the head of the [illegible] had the good fortune to see the old farmer from the village, come along soon after I arrived. He was much astonished to see me back again — promised to bring me up some more provisions in the morning. I learned from him that the S. B. Franklin was up and would be down the following day — this was cheering news as it seemed to afford means for my departure.

Friday Sept 21. clear pretty warm impatient to see the boat. —

At about 12. o'clk m. Mr Jones and his party of Line surveyors came along and camped on the point near me. Soon after they came I had the pleasure of seeing the Boat coming round the point. I immediately struck my tent and made ready to go on board, as she neared I hailed her and the engine stopped and the Capt. asked what I

wanted on my reply, my business
I wished to get on board with
My horse and go down to the mouth
of the Chippewa, he said he
would not land and take me
down for less than two dollars
as this is about 3 times the ordin-
-ary charge (it only 12 miles) I
declined going, and he passed on.

I accepted a friendly invitati-
on from Mr Jones to camp with
him till the following day, when
I could ride up to the mouth
of the St. Croix. and get a boat
without being imposed upon, as
they all [illegible] them.

Soon after the boat passed the
old farmer true to his promise came
with my provisions

~~Saturday~~ Friday 22nd Sept. Cloudy
and sprinkling rain made ready
and bid farewell to Mr Jones who
I was very favourably impressed with
and started. So slow was my
progress, on account of the soreness
of my horses legs. that I only made
about 10. miles - and camped for
the night

~~Saturday~~ Monday (two days lost here somehow) Sept 25 came on up
to the mouth St. Croix. here I lear-
-ned that there would be no steam
Boat up for near a week, could find no
person to give me information about
the country through to [illegible] and
am at a loss how to act.

Tuesday 26 [illegible]

Two Days out in date some how

Tuesday Sept 26. Cool frosty morning. Started early to trip the country – see hills all along from within a short distance of the mouth St Croix capped with the top of the upper rock at Falls St Anthony – same continues on till near Rush river – here there is to be seen a bluff on the East side the River, of Formation No 2d. did not reach Rush river by some 2 or 3 miles – camped in the prairie

Wednesday Sept 27th

Cloudy – rained during night – had to walk nearly back to Kinnickinnick to find my horse. did not get started till near noon. came on across Rush river here I find myself immediately after crossing in the midst of the Pinery.

There are some white pines here of enormous size, but they do not seem to grow very far back from the river and great havoc has been made among them by fires, and the logging Parties. I saw no place where the growth was exclusively pines. They are scattered about and mixed with various deciduous Trees such as Linden, American & Slippery Elm, Sugar maple oaks White walnut &c all of these are of very large size. The undergrowth is water Beech, hornbeam, Prickly Ash Sumach, [illegible] moose wood &c. The surface of the Country is undulating & well watered with good springs. The soil is first rate. I saw some Club moss different from & larger than any I have seen. After crossing Rush River, I was much puzzled which

road to take there being a great number of logging roads going out in all directions. I at last started on one which leads
Saw a large track [illegible]
off in a South East direction. After I had followed it some distance I came to a shanty apparently erected for the accommodation of hunters or loggers. As this road had for some distance back been nearly due South I determined to leave it and go east. I then went East some four or 5 miles over a country in every respect similar to that I have described, excepting that there are no pines. Towards evening my course was over on higher ground than I had yet met with. I hope this may be the dividing ridge between Rush & Tangalle. Camped for the night on this ridge without water.

Thursday Sept 28th

Cloudy morning – had another hunt after my horse this morning, he had fed off some distance and as I was in the midst of a dense forest I was afraid to go after him without blazing my road from my camp lest I might not be able to find my way back. I had hunted some time and given him up almost, and went back to camp intending to pack my blankets & saddle bags of meal and road on my back. but I thought I would make one more effort by which I fortunately found him.

I travelled on S.E. nearly the whole day through a very brushy country — growth same as seen yesterday. Towards 1. oclk I came to the head of a deep hollow

which leads off due east. descending
this I noticed the highest rock I saw was
No 2d and the lowest the No 1st. On arriving
at the bottom of this valley I found my
self in the midst of an almost impenetra-
ble thicket amongst which was the much
[illegible]
dreaded prickly ash. My nerves hesitation
had grown much better were soon became
steady and steady. consequently my progress
was very slow. After I had gone some
distance down this valley I came to a
pretty stream of clear water running
down the middle of it. As the valley
soon bore off south of east, and the
travelling was so bad in it I ascended
the bluff, which I suppose must be not
less than 250 ft high and continued my way
S.E. through a heavy forest, until

coming south. Towards evening I unexpect-
edly came upon what seemed to be the
same trail I had started from Rock
River upon. It here—where I struck it
ran east and west. Knowing the Sem-
inole village East of me I started on the
East end of it, but I had not gone far
before I bore round and continued as far as
I followed it to bear to the north. Knowing
this would not be my course, I was
puzzled to know which end to take. I
knew I had left it on the East side
and I was not certain I had not crossed
it. I at length followed the west end
supposing it would probably bear round
to the South East (the direction I thought
the mill must be from me) but after
following it a long distance it continu-

and to go west & I turned back & followed the other trail on North East till towards night, when I camped.

Friday Sept 29th

Morning cloudy — commenced a shower of rain just as I was starting — several showers during the day.

I followed the South end of the trail some miles and found it ter-minated west and south west, consequen-tly I left it and bore off the south East. I have been passing the heads of valleys all the afternoon which lead due east. I have been in a rich heavy timbered country all day all this country clear through to Rock river is [illegible] by form No 2d. as you approach these valleys on my left; the face of the country becomes broken; but off to the west it is level or undulating till you come within the vicinity of Rock river when it is again more broken. Saw many deer tracks and several of Elk during the day.

Saturday Sept 30th

Clear cool morning — started at sun up for South East. My horses legs look very bad. Towards 12 o'clk M. came to a large deep valley off to the S.E. descended bluffs apparently not less than 100 ft high found the valley like that of all the streams I have met with in this region East of the Mississippi — it is densely set with undergrowth, amongst which is the much [illegible] dreaded Prickly Ash. After much troub

and a plan I decided at this morning
the present day and knowing I [illegible]
was on the Chippeway. [illegible]
was from the mouth of the [illegible] I
could not tell. By this time my poor
horse [illegible] and [illegible]
frequently show that the [illegible]
[illegible] and [illegible] his [illegible] he had
also grown [illegible] that I
had not been able to get him to [illegible]
more than [illegible] a day the last
two or three days. What I should
do [illegible] of a [illegible] to know. To go up
the valley was out of the question [illegible]
[illegible] with [illegible] now
My horse [illegible] with [illegible]
[illegible] to the top of the great hills seemed
equally impossible. But after resting
a while I commenced ascending slope

ally backwards and forth and frequently
resting I at last reached the summit.
I am now convinced that the trail
I lost yesterday upon first coming to this
to the [illegible] is the one leading from
mouth of the Chippeway to the Mille Lacs. Conse-
-quently I determined to try and make
my way back to it. After going about
some hours at an extremely slow rate
my horse would move no further without
a great deal of whipping and trouble.
I at last concluded to camp although
there was one or two hours before sunset.
Country passed over today rich and
heavily clothed with timber of the same
kinds already mentioned with the addi-
-tion of white birch and ash. The
[illegible] always small, wilder

[illegible] which [illegible] great [illegible]
[illegible] of [illegible] and [illegible]
[illegible] the [illegible]
[illegible] The [illegible]
[illegible] the [illegible]
[illegible] in the valley.

[illegible]
[illegible]
[illegible]
[illegible] the [illegible]
[illegible] in the [illegible]
[illegible]
[illegible]

[illegible] ~~Sept~~ Sept 1st

[illegible]
[illegible]
[illegible]
[illegible]

[illegible]
[illegible] of [illegible]
the [illegible]
[illegible]
[illegible] the Chippewa [illegible]
[illegible] and [illegible]
[illegible]
[illegible]

[illegible]
the [illegible]
following [illegible]
[illegible] the night.

Monday Sept 2nd

[illegible] the [illegible] and followed
[illegible]
[illegible]
[illegible]
[illegible]

[illegible] [illegible] the country [illegible]
[illegible]
[illegible]
[illegible] [illegible] [illegible]
[illegible] [illegible] [illegible]
[illegible] [illegible] again [illegible]
[illegible] [illegible]
[illegible] heading off to the [illegible]
[illegible] [illegible] to follow [illegible]
[illegible]

Tuesday Oct 3

[illegible] [illegible] night [illegible] [illegible]
[illegible] [illegible] [illegible]
[illegible] and [illegible] night [illegible] [illegible]
[illegible] [illegible]
[illegible] [illegible] [illegible]
[illegible]
[illegible]

[illegible] [illegible] [illegible] along
[illegible] [illegible] all [illegible]
[illegible] got them and [illegible]
[illegible] off. I rode back and
[illegible] a few good [illegible]
[illegible] [illegible] [illegible]
[illegible] here for the night
[illegible] [illegible] [illegible]
[illegible] [illegible] after [illegible]
[illegible] returned to [illegible]
[illegible] [illegible] they [illegible]
[illegible] [illegible] [illegible]
[illegible]

Wednesday Oct 4

[illegible] [illegible] [illegible]
[illegible] [illegible] [illegible]
[illegible]
[illegible]

[illegible]

[illegible] I continued on [illegible]

[illegible] to [illegible]

[illegible] the [illegible]

[illegible] thinking I might

[illegible] of [illegible]

[illegible]

[illegible] till [illegible]

[illegible]

[illegible] Oct 5

[illegible] back the [illegible]

[illegible] find no place [illegible]

[illegible]

The [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

that I [illegible]

[illegible]

[illegible] of [illegible] to the [illegible]

[illegible] back to the [illegible]

[illegible]

[illegible] of [illegible]

~~S~~ Friday Oct 6

Rained all night with thunder & lightning still raining this morning came through the coal [illegible] & arrived near Kilkenick where I camped for the night.

Saturday Oct. 7th

Clear cold morning. Came on to North St. Louis. Had been [illegible] a few minutes [illegible] Mr. [illegible] the surveyor [illegible] Gro [illegible] a [illegible]

amily. I accepted a kind invitation to stop with him till I was ready to start.

Sunday Oct 8th

Having procured a small Canoe & some provisions &c I made an arrangement to send my horse back up to Still water & launched forth on the broad bosom of the father of waters at 9 A.M. I came on down about 15 miles and camped for the night.

Monday Oct 9th

Came on down to Red Wing took sketch of Sugarloaf, County Seat & visited same. Soon after I came into Lake Pepin the wind commenced blowing and the Lake became so rough that I was compelled to run ashore & camp within 20 minutes after I landed & removed my baggage from my little Canoe she was swamped and filled by the waves. Continued to blow all day

Tuesday Oct 10th

Bright clear morning. heavy fog on the Lake. Started as soon as it blew away. Sunny pleasant. took sketch of the [illegible]. Coarse rock in the hill here No 1. 2 upper one No 2nd nearly all the precipitous part is No 2nd below which I saw No 1.

Was prevented from going much farther by high wind & rough water. Camped on the left shore. beautiful moonlight night.

Wednesday Oct 11th

Came on down to [illegible], but did

not arrive there till it was too late to
start for Bayfield.

At about 2 o'clk P. two voyageurs arrived
with a letter from Mr Macy at the Trading
house at the Mouth Chippeway stating
that he and Dr Owen had arrived there
that evening, and having learned that
there was a canoe at McKains going
over the Carry path in the morning
they supposed it must be me I had
sent up to a certain. He also stated that
they had brought down my things & would
be glad to see me as soon as I could come
down. As I was tired and it being
late I sent back word that I would be
down in the morning.

Thursday Oct 11th

Came on down to the Trading
house where I found Dr Owen & Mr Macy
waiting for me, and much pleased to
see me alive & well and they had been
very uneasy about me. They were just
preparing to send a party in search of
me on the following day when they
heard I was at McKains.

Friday Oct 12th

Cloudy, high wind. Spent the day
packing specimens and writing to
friends.

Saturday Oct 13th

Clear warm day Dr Owen Mr Macy
and myself went across the river to
examine the magnesian limestone
near where Mr Macy discovered a
vein of lead ore last year & we found
in the lower slaty beds, crystallized

ore quartz. crystalized Blk oxide
of Iron and some good specimens of
Euomphalus and trochus all of which
accompany the veins of lead found
in the rock in Missouri. But we saw
no lead. Mr. Macy & Dr. Owen will
leave in the first boat and I will re=
=main here to make further examin=
=ations for lead on the other side
the river, for some 8 or 10 days yet.

Sunday Oct 15

Morning clear. Storm with
high wind about noon. Evening
Calm. smoky like Indian Su-
=mmer for some days past. Trees
stripped of their foliage & ground
strewn with yellow leaves.

Dr Owen went up to Still-
water this morning.

Monday Oct 16th

Cloudy morning with occasion-
=al rain - cool. I am to remain
here till the boat returns when I am to
get on board and go down to a point a
few miles below on the other side where
I am to make some further examination.

Tuesday Oct 17th 1848

Morning clear white frost ground
froze hard enough to bear a horse.
Clear and cool all day. Ice 1/4 inch
thick and did not thaw in the
Shade all day.

Wednesday Oct 18th

Morning cool & cloudy. about 11 o'c
came up from the North East a heavy
snow storm the first of the season

cannot imagine what keeps the
steam boat. Every thing without
has a gloomy winter like appearance.

Thursday Oct 19th

Cloudy cool morning – no boat got
St Franklin came down this evening at
7 o'clk. Dr Owen on board – I landed
[illegible] on Mr Veazy and some [illegible]
a box of specimens. Dr Owen gave
me further instructions to examine a
bed of limestone on the Wis side the
river near the foot of the lake which
is said to make good lime. I will
remain in this neighbourhood untill
the S. B. St Franklin returns when
I will send a final [illegible] from the
[illegible] to field work and start for
Prairie du Chien where I join the

rest of the corps and start for home

Friday Oct 20th

Cool cloudy morning – crossed over &
examined the supposed bed of limestone
at the foot of the lake found it to be mere-
ly masses & fragments of the upper bed
of the lower magnesian limestone that
have fallen down to the foot of the hill
along the shore of the river and lake
they differ in no respect from this
rock at other places.

The prairie sand is seen all along
here near the water line, rising some 20 or
25 feet above the water, I came on down
and stopped at Mr. Coulter's where I arrived
at 12 o'clk. A.M.

Saw some men [illegible] fishing just
below the foot of the lake as I came

seen they were throwing out the sinkers, bass and pike nearly as fast as they could bait and cast in the line. Mr. Read a trader at the place informed me that a good fisherman could catch near a barrel of these fish in a day at that point. The bass are much larger than any we have in the south, being from 7 inches to 2 ft in length.

Saturday Oct 21st

[illegible] clear morning – Temp. at 6 [illegible]. Spent the day [illegible] [illegible] [illegible] quarry [illegible] [illegible]

[illegible] to the surface.

Sunday Oct 22

Morning clear – Temp at 6 o'clk 53. – as it should always be – a day of rest.

Monday Oct 23rd

Rain during the night morning cloudy and [illegible] [illegible] this morning [illegible] [illegible] [illegible] I asked him to show me a specimen of the ore and he hunted up some pieces of crystalized iron ore [illegible] and handed them to me, asking if they were "any good". When I remarked that it was not of any value

readily when found in very large grains this he smiled and looked as though he thought I was wishing to deceive him. I then asked him if he could take me to any place where there is lead ore and he said yes but I must pay him. I then told him that if yes he would take me to a regular vein of good lead ore from 2 to 6 in thick I would give him four dollars but gave him to understand that he must show me the very spot so that I could get a specimen or I would not pay him. Upon hearing the conditions he answered that he was not sure it is lead but was inclined to think it the same mineral he had shown me.

Being convinced that he was either not acquainted with any such vein or that he was afraid to show it on account of the jealous or suspicious disposition of the half breeds, on whose reserve I was making examinations, I declined to employ him, and went on hand Spent the day alone amongst the hills found some good specimens of the same fossils heretofore found in the Magnesian Limestone.

Tuesday Oct 24th

Morning clear. Atmosphere so full of smoke can scarcely see across the river. The prairie would be on fire at no great distance. Examined the Bluffs and Coulees along Embarras river for some distance. Indications of lead not quite as favourable as along the

Bluffs below Mt Carbon – See not a particle of lead yet.

Wednesday ~~Friday~~ Oct 25th

Cloudy – Atmosphere surcharged with smoke. cold wind from S.E. – Measured to the formation of R 131 & No. 2. which I found to be 350 above the level of the river three miles below the Cabin. On the Sandstone here several Indian hieroglyphics: amongst other things I noticed a rude figure of a horse.

I see occasionally still in bloom in the bottoms a few flowers although the grass is all dead and ^of vegetation generally the trees stripped of their leaves. The plants I saw blooming this end of season were the Cosmos Virginica and Viola [illegible]

Thursday Oct 26

Morning clear cold – White frost on the ground. [illegible] made some sketches – tried to get Dr. Hoop to go with me to the lead vein he showed Mr. Macy last year, but he would not go.

Friday Oct 27th

Cloudy morning – came over to Athens to await the SB Franklin. Evening – ferried over by an old squire. Commenced blowing very [illegible]. Canoe came very near swamping. commenced raining at 12. o'clock and continued to rain all day

Saturday Oct 28

Clear cold day – Boat came along 12. P.M. came on board some 14 passengers. found Mr Rand[illegible]

Dr. Parry & Dr. Norwood on board —
[illegible] at 6. o'clk. A.m.
along bare ground — Passed mouth
Elk River at 9 o'clk. [illegible]
like at the mouth [illegible] —
some [illegible]
for [illegible]. Arrived at Prairie
du Chien at 12 o'clk — found here
Mr. Evans with our trunks and
baggage. Dr. Owen had gone down
to Davenport. Arrived at Dubuque
at 9. o'clk A.m. Dr. Norwood and
Mr. Evans stopped here and Mr.
Randall, Dr. Parry & myself came
on board and arrived at this place
at 1. o'clk P.M. Immediately
after which Dr. Parry embarked
on the Red Wing for home. Mr

Randall & myself remain till Mr.
Evans & Dr. Norwood come round.

Sunday 29th.

Stopped at City Hotel —

Monday 30th

visited the Mining & collected
some fossils from the upper
Mag. Limestone. Visited Mr.
I. G. Potters collection of min-
-erals & fossils. Mr. Evans
came up this evening. The
Draft on the land office for
7.000 with which he was to
have paid us off was not
honoured in consequence of
there not being that amt in
the office — cold and snowing

Tuesday Nov 1st

Cool cloudy day. Mr Tenney loaned enough to pay my way home. Started on the S.B. Falcon at 3. Oclk P.M.

Wednesday Nov 2d

Morning cloudy - hard freeze white frost. 8. Oclk 9. miles above Rock Island - snowing so hard can scarcely see shore. Struck a rock just now no serious damage. Arrived at Devenport at 2. Oclk P. Dr Parry had just arrived at home. Dr Orr has started from Devenport a few days previously. Came on up to Bloomington at 7 P.M. where we remained till morning.

Thursday Nov. 3.

hard rain all night. wo off boat leak found my nest box - ½ full of water - more or less wetting of clothes &c Among all the Papers.

quite cool at 8. Oclk this morning - heavy thunder shower notwithstanding & very high wind. cloudy with high wind all day.

At Burlington at 4 Oclk saw lying on the shore Dr Shumard's Bark canoe and learned that Mr Pratten & Mr Hains came to this place in it and left here yesterday for home on the S.B Kidwing

compelled to lay by all night

on account of high wind from
S. W. river so rough could n't
run - very cold.

Friday Nov. 4th

Cloudy - cold - high wind from
S. W. run a few miles and
compelled to lay by - freezing.
Started at 4 o'clk and arrived
at the head of the rapids at 7 o
Layed here lightning off or till
11 o'ck the following Morning
(Sunday) Saturday Nov. 5th
Started as above and came
down to a landing opposite
the Mormon city. here
I collected some fine fossils
of the mt. Limestone which
was here some 40 or fifty
feet above the river. arrived
at Keokuk. Saw many fossils
of Mt. Limestone here but did
not collect any. Saw Mr
Patten. Started from here at
7 P.M. run all night[illegible]
[illegible]

Monday No 6.

Bright clear cool morning
Passed Hannibal Missouri
at 8 o'clk A.M. arrived at
St. Louis 4 o'clk A.M.

Tuesday Nov 7th

Found the S.B. Whirlwind
ready to st. start for Cincinnati
took passage - Started at 4 o'ck
A.M. Stopped at St. Genevieve
at 8. P.M. got specimens of

Soon on [illegible] Pilot Knob

Wednesday Nov 8th

Bright clear morning —
See a manifest difference
in the ap. of vegetation here
and in the Sou. of State
notice here the stripped
foliage at mouth but [illegible]
here green yet

Mouth Ohio 10 o'clk.
Paducah 3 P.M.

dates agree
with
1854
Calendar

[Owen Survey,
1848 - 1849]

Date	Time	At.	Det.	[illegible]	[illegible]	Ht.
[illegible] 20	12 M	49		7785 352	7433	
	2 P	51		7741 428	7313 120	
23	7 A	54		7748 372	7376	
	11 A	52		7666 433	7233 143	
25	9 A	58		7778 296	7482	
"	11h A	51		7724 352	7372 110	

At Mr Crait's house 25 ft above River

Hill on right side 4 miles below Lake Pepin

At Mr Crait's 25 ft above River

Hill 5 miles below Lake Pepin

River bank above Mr Crait's 5 ft above River

Junction of Rets 1 & 2 in the hills back

[illegible] Vil. & Bands that receive annuities

[illegible] 40. [illegible] Wabashaw. below the mouth Chippeway

100 Red wing. Head Lake Pepin

150 Little Crow. [illegible]

200 Blk Dog. 5 miles above Ft

400 Little Six. 18 miles above Ft. [illegible]

[illegible] [illegible] ([illegible]) 9. above the Ft

70 Man that walks in the clouds 6 M. above Ft.

Date	Time	H. Del.	[illegible]		
Dec 20	12 [illegible]	58	[illegible]		
			271	1233	
	5 [illegible]	53	[illegible]		
21	1 M	[illegible]	[illegible]	1492	
			[illegible]	486	
	[illegible]	[illegible]	[illegible]		1
				7507	

[illegible] 4x4 [illegible]

	12 M	[illegible]	774	
			[illegible]	2 [illegible]
	2 [illegible]	[illegible]	[illegible] 5	
[illegible]				[illegible]

[illegible] of the [illegible] of Coatts 1233
[illegible] 2 [illegible] 7382
1[illegible] 453

1 [illegible]	1 [illegible]	51	1[illegible]	78[illegible]
22	9 A	52	144 / 372	78[illegible]
	[illegible]	54	1466 / [illegible]	[illegible]
	5 [illegible]	55	[illegible] 29	143
			[illegible] 5	73[illegible]4
23	9 A	58	7718	
	1[illegible] A	57	[illegible] 46	1482
			7[illegible]24 / 352	13[illegible]2
				115

[illegible] E 1 A 2.

At Coatts — the right bank [illegible]
three miles below mouth [illegible]

[illegible] mouth of Coatts

[illegible] Coatts

[illegible] mouth of [illegible] Coatts.
[illegible] at Coatts

H. [illegible]
[illegible]

1724 [illegible]

The Trap at the Falls St. Croix
These rocks are separated "by a hammer-
-stroke of the artificer of worlds"
[illegible] [illegible]

Corps

Dr. D. D. Owen principle 1
Dr. [illegible] principle assist. 2
Dr. [illegible] Assist 3
Mr. B. C. [illegible] 4
Dr. B. F. [illegible] 5
Col. Whittlesey 6
Mr. George [illegible] 7
Mr. A. Barrett 8
Mr. John Bartlett
Dr. C. C. Parry Botanist
Mr. R. R. Haines artist 11
F. B. Meek 12

"shaggy and wild
with mossy trees, and Pinacles of flint
And many a hanging crag"
"Touched by the fingers of Time"

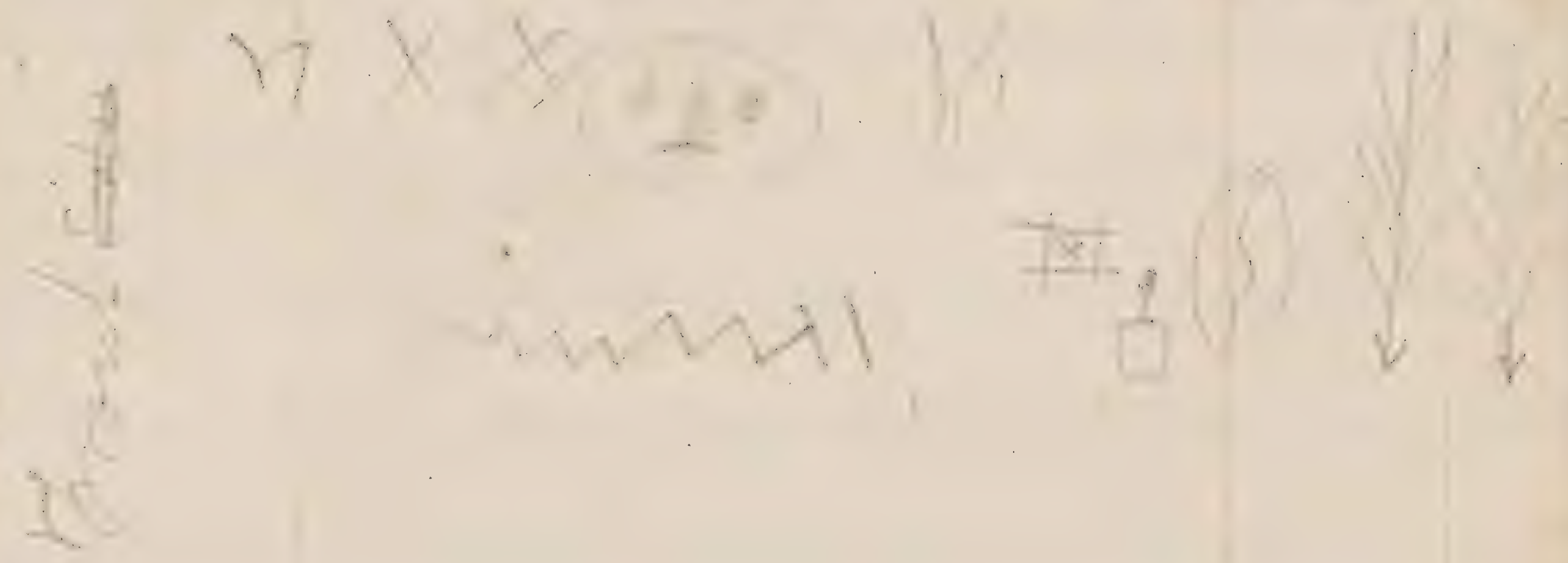
Notes of Survey St. Peter, near mouth Margaro.

S. 60. E. 4	N. 70. W. 1	S. 30. E. 1		South. 8	S. 60. E. 1
N. 80. E. 1	N. 60. W. 1	N. 30. E. 1		S. 30. W. 1	S. 30. E. 1
S. 20. E. 3. W.	N. 40 W.	S. 20. E. 1	Granite left	S. 10. W. 1	South 2. [illegible] camp
S. 20 E. 2	N. 30. W. 6	South 2	700 ft from [illegible]	S. 20. W. 3	camped mouth Margaro
South	N. 30. W. 1	S. 30. W. 1		S. [illegible] W. 1	[illegible]
S. 10. E. 1	N. 60. W. 1	S. 70. W. 6		South 1	S. 40. W. [illegible]
S. 40. E. 1	S. 37. W. 1	S. 20. W. 1		S. 50 E. 1	South. 2
S. 80 E. 1	S. 30. W. 1	S. 20. E. 1		S. 60 E. 4	S. 20. W. 1
East 1	S. 20. W. 2	S. 30. E. 8		East. 1	S. 60 W. 2
N. 70 E. 1	S. 30. E. 4	East. 6		N. 60. E. 1	South 1. (VII. 16)
East 2	S. 40 E. 1 (R. W. 18)	S. 50. E. 2		N. 20 E. 5.	
N. 50 E. 2	S. 10. E. 1	S. 40 E. 4 (VII)		N. 20 E. 1	
S. 30. E. 2	East 1	S. 70. E. 2		S. 70. E. 1	
S. 20. E. 5	N. 60. E. 1	N. 70 1	Rock bottom	[illegible] 20. E. 4	
South 4	East. 5	N. 50. E. 1		S. 60. E. 1 Stream left	
S. 10. W. 1	N. 40. E. 5	N. 40 E. 4		East 2	
S. 60 W. 1	N. 50. E. 1	East. 1		S. 60. E. 1. Rock Rapids	
West.	S. 80. E. 2	S. 10 E. 1		East 2. Rapids	

	[illegible]	
	[illegible]	
	[illegible]	
	[illegible]	
	[illegible]	[illegible]
[illegible] 9th	[illegible]	
	[illegible]	62
	[illegible] Stillwater	1.00
	[illegible]	50
	[illegible]	25
[illegible] 14	[illegible] on Lake Pepin	50
	To Expenses at Reaning [illegible]	1.00
22	[illegible]	
	[illegible]	
	[illegible]	1.37
[illegible]	Canoe	2.00
	Sewing [illegible] to Stillwater	1.25
	[illegible]	25
		9.41

near head Lake Pepin

Indian Hieroglyphicks on sandstone in Cave



Form

Township 5. About three sections rolling prairie, the rest is a very stun-ted growth of oak - no good timber. Well watered on the north & south by streams and springs. Soil: third rate, sandy, and light coloured. Subsoil, sandy. Iron ore (No 15), scattered in some masses on every section, and [illegible] section in the Township. The prevailing rocks in the ranges are Specimens No 7 & 14. No diggings, and no discoveries of lead ore.

heading

Description of the individual Townships - face of the country, relative proportions of Prairie & timber, how watered, qual. of soil, mineral rocks &c

Order of Formations

No. 1.

F. No. 1a Pebbly sandstone including coarse and [illegible] sandstone of F. 1. adjacent to the igneous rocks.

No 1b Lingula layers of the falls St. Croix

No 1c Lingula sandstone (F. 2a)

No 1d Green sandstone (ferruginous) and green sand, including shales, water, Trilobite bed and fucoidal, lingu. and thin bedded light brown-ish & bluish sandstone.

No 1e Thick bedded sandstone including Trilobites, with Lingula [illegible] concretions - generally

No 1f Alternations of sandstone & magnesian limestone with Oolite layer terminating usually with a white quartz-

= durated
Sandstone either soft or [illegible]

Formation No 2.

No 2.a Lower cherty beds of lower magnesian limestone

No 2.b upper beds of Lower magnesian limestone

No 2.c St. Peters sandstone. it may belong to formation 3 more properly

Formation No 3

No 3.a Lower Shell limestone the Equivalent of the Blue Limestone of the Ohio valley

No 3.b Middle blue argillo-[illegible] -ceous beds - no fossil [illegible]

No 3.c upper shell limestone the upper most rock at the falls of St. Anthony

Piney Rush

Some 15 miles above the shanties it extends some 15 miles west & East towards yellow Riv. The shanties is nearly at the lower end of it. Trees very large, [illegible] before last 12. [illegible] at [illegible]. fire only burned the woods near the shanties not more than 20 [illegible] by [illegible] to [illegible] Rush Riv. did not go to the end of Pine north. Country above the shanties across to [illegible] generally pretty level. Somewhat broken near Rush Riv. & [illegible] Plenty of good springs. Soil seems to be sandy & not so good as further South. Seems to be underlayed by St. Peters sandstone. Saw logs 16. ft. 5 of one tree. 5 ft. diam

[illegible]

[illegible] & pebble sandstone [illegible]

[illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] sandstone

---

all white pine. Pine all along on the margin of the Riv. from upper to Lower Shante but not any distance back from Riv. All the pine cut on Rush Riv. right about the upper & Lower shante. About 15000 Logs cut Last year. on Rush

Elk Deer wolf. Martin (Pakar) few Beaver, plenty Bear minks fox. Rabbt. weasel few racoon. no wild turkey. plenty pheasants. Red Squirrel. Striped chipmunk. small Blk rattle Snake very numerous. trout abundant in Rush River

---

[illegible] on the left opposite mouth Chippewa [illegible] [illegible] [illegible] to the [illegible] 1861 [illegible]

Prairie de Chien

~~Oct 21, 1878~~

U. S. Treasury Depart

To John Smith Dr

For services from Aug 29. 1878

to date —— days @ 1 $. —

Rec payt of B. Davis

U. S. Sub Agent

F. B. Marks } John his X mark Smith

Witness }

B. C. Vreeny

Hudson N.Y.

If wanted after the 1st of Decr

say at 444 Grand Street New York

Aaron Jameson

Stillwater Mn

Omissions

Oct 7. Provisions to Pawn ... Ch. 1.00

Indian Hieroglyphick on rock ...

3 miles below Lake Pepin

[illegible] camp Dr

2[illegible] lb Flour
2 lb Rice } from Thomas's camp
2 lb Sugar
5 [illegible]

The [illegible] in [illegible]
[illegible]
[illegible] ([illegible]) ([illegible])
Thousand "Underland" [illegible]
[illegible]

On McKain's farm just above the mouth Chippeway I saw 48 Bushels of the finest potatoes I ever saw, dug off a space of ground 40 steps long & 14 wide 300 Bu per acre average crop

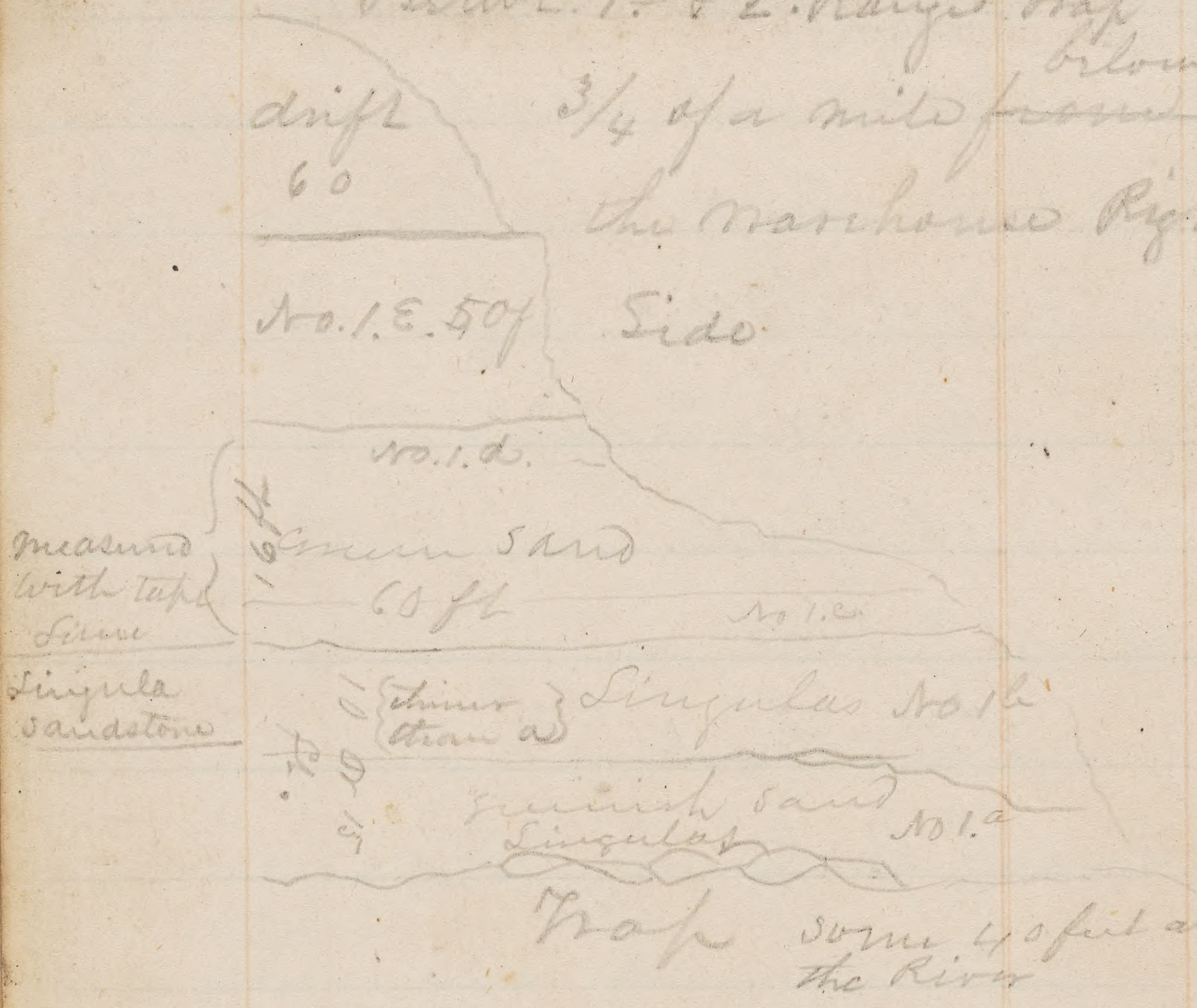
[illegible]

[illegible] Camp at [illegible] Dr

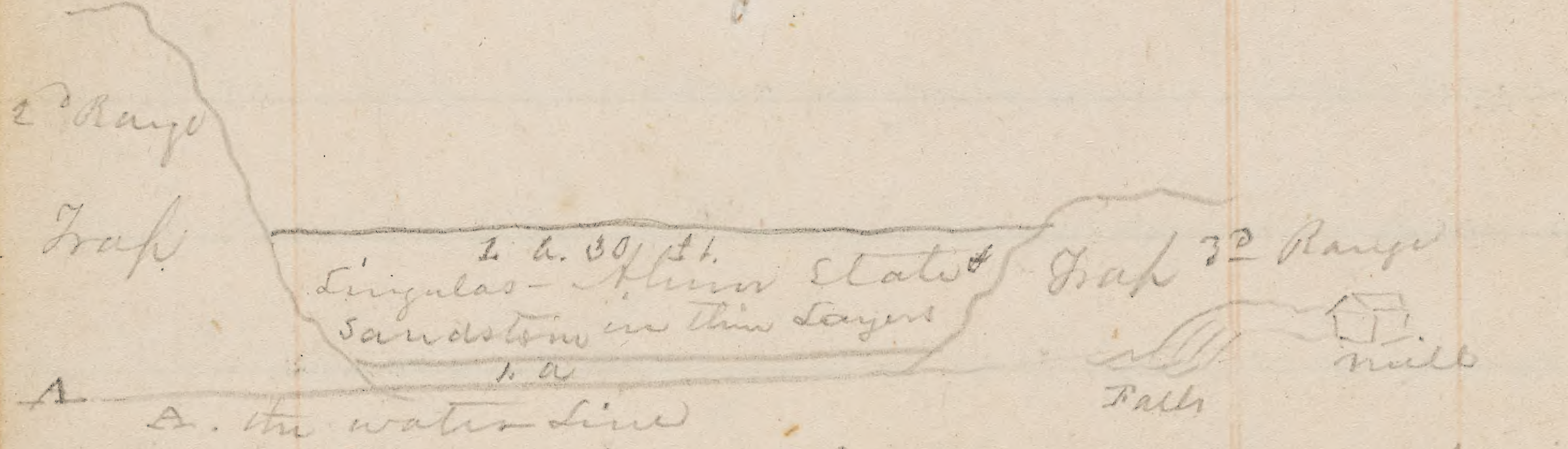
	5	21 lb Bread
	7	Pork
	4	Pork
	9	Dry Bread
Nov 15th	13 lb	Pork
"	9 lb	Sugar
	3 lb	Dry Fruit
17.	10 lb	Pork

Betw. 1st & 2d Range Trap

3/4 of a mile ~~from~~ below the warehouse Right Side



all dip slightly from the E. toward the 1st range.



No 1a & 1b Between 2d & 3d ranges are not ~~so~~ so much elevated above the water line as they and the superincumbent strata are between the 1st & 2d Ranges. there No 1a is some 40 or 50 feet above the water. here - at the falls No 1a is scarcely above the water. and the

The following fossils are included in Dr. Morton's List of Cretaceous fossils - they belong according to Mr Lyell (see Page 141. Lyell's Travels in America) to the Eocine - of S. Carolina - viz Balanus Peregrinus - Pecten Calvatus - P. Membranosus - Terebratula Lachryma, Conus gyratus - Scutella Lyelli - and Echinus infulatus (Mortons synop pl. 10)

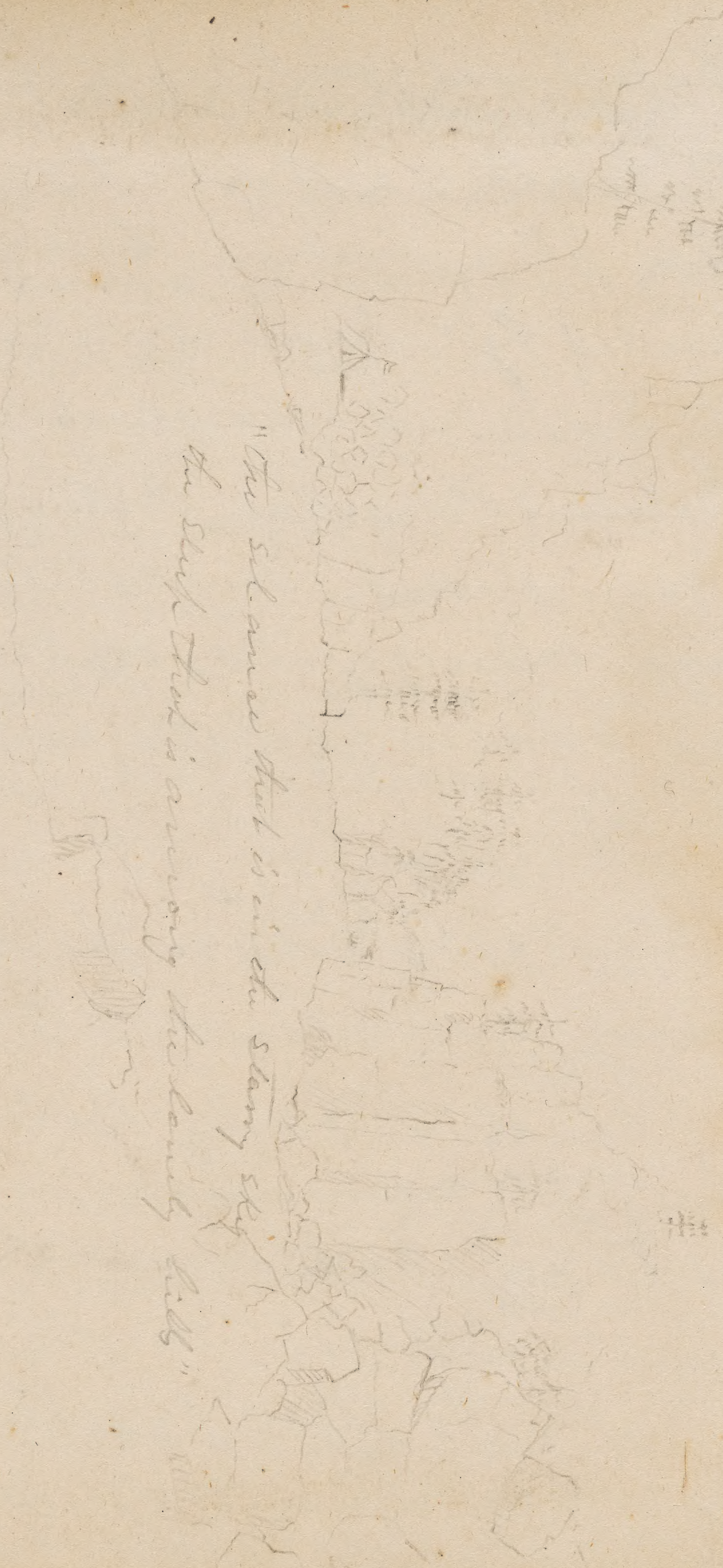
Jas. Clark Cin^a race st. over the canal -

Saml L. Carley Baker st.

Henry Anderson walnut st.

All can direct me To Mr. Bartlett

fall in the river is not over 8 or ten feet



View of our encampment of Aug 8. in Dalles of the St Croix among the Trap rocks

aug 10 Pork 13 lb
" 12 – sugar 10
" Apples 3,
" ~~Flour~~
18 Pork 10 lb

Sioux	English
wakan or wakon	spirit = diety
mini —	water
— mini wakan —	spirit water
chante —	heart
mini-wakan-chante	heart of the spirit, water
Schicha — —	Bad
wattpa — —	River
wattpa schicha —	Bad River
wakan schicha —	Bad Spirit

Metifs half breeds of red River
[illegible] of colony planted there
by the Earl of Selkirk

The spiral shell often seen in the
mountain Limestone resembling a
small Ammonite with a pentangular
Aperture is the Euomphalus pentagulatus
See Lyells elements. vol 2. page 123.

The yellow flower with long tubular
corol or calix Harris called Evening Prim-
rose is a species Enothera

Timmers Geology - a good elementary
work - price 2$. large for the price

Lake St. Croix -
If "Loch Katrine" presents
a more attractive outline of
sylvan coasts, it must be beautiful
indeed

110
3 3/4
330
8 2/4
41

Paludinas in the Ohio are

P. decisa
P. Ponderosa - large thick
the pretty minute Helix with a lip
found at Still water is the
H. Labyrinthica

(Cedar)
Juniperus Communis (Common Jun[iper]
" Virginiana (Savon [illegible]

7376		
7384		
2) 14760		7376
7380		73
7376		

7380
7233
147
3
441